

June 2024

# What It Will Take

## Modeling Solutions to Homelessness in the Bay Area

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### Overview

**All Home's *Solutions Modeling* is a system modeling tool designed to estimate the investment and added inventory required to implement the Regional Action Plan.** Specifically, it estimates the additional homelessness prevention, permanent housing solutions, and interim housing needed to rapidly and substantially reduce unsheltered homelessness in the Bay Area, and the additional funding required. The resulting estimates—included in the updated Regional Action Plan—are also presented in an interactive format in the [Regional Action Plan Solutions Dashboard](#).

**This report describes the methods, key assumptions, and data sources used to produce the Solutions Modeling estimates.** It also describes the motivation behind the distinguishing characteristics of the model, chief among them being the ability to link reductions in new homelessness to expanded investment in targeted homelessness prevention. In presenting this technical explainer for the model, we hope to foster productive conversation about the utility of goal-based system modeling and gather insights informing the continual refinement of the Solutions Modeling tool and the strategic blueprints it provides.

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### Introduction

What will it take to rapidly and substantially reduce unsheltered homelessness across the Bay Area? How many new rental subsidies and newly constructed homes do we need to create sufficient opportunities to exit homelessness? How many additional interim housing units will be needed to provide stability and shelter while we secure that much-needed housing? And how many households can we prevent from becoming homeless in the first place, reducing the demand for more expensive, intensive housing interventions?

All Home developed its *Solutions Modeling* tool to help answer these questions. It draws on a variety of data sources to estimate the approximate number of new supportive interventions and housing units required to substantially reduce homelessness across the region. In doing so, it produces **a broad roadmap for implementing the Regional Action Plan, a homelessness reduction strategy based on concurrent investments in homelessness prevention, permanent housing solutions, and interim housing.**

Understanding what it will take to reach this goal is a crucial step toward actually achieving it. Calculating ballpark figures for additional inventory and funding required can inform discussions on strategic planning, resource allocation, and advocacy for new funding. Perhaps most importantly, **the findings help demonstrate that when the scale of investment matches the scale of the crisis we face, change is possible.** Similarly, the estimates help us understand our limited recent progress despite increased (though still insufficient) new funding and policy change.

This report serves as a technical explainer for the Solutions Modeling tool. It describes in detail the methods used to generate the estimates including data sources and key assumptions. **The technical documentation reported below supports two other complementary resources:**

- All Home's **Regional Action Plan**, updated in 2024, is a call to action and draws on Solutions Modeling estimates to inform recommendations on how to better prevent and reduce homelessness across the Bay Area region.
- The **RAP Solutions Dashboard** reports Solutions Modeling estimates for the region and all nine counties within it in an interactive format that shows users the interdependence of new investments in homelessness prevention, permanent housing solutions, and interim housing.

We begin this report by highlighting the major motivations that informed the design of the Solutions Modeling tool, calling attention to characteristics that distinguish the model from comparable systems modeling tools. Then we describe the process, data, and assumptions used to estimate the need for additional homelessness prevention assistance, permanent housing solutions, and interim housing, along with the associated costs. The report concludes by acknowledging several limitations of the model in hopes that such transparency fosters productive conversation about how we can continually improve our estimates and about the utility of incorporating systems modeling into long-term strategic planning.

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## Model Design Motivation and Distinguishing Characteristics

**The Solutions Modeling tool is a goal-driven gaps analysis intended to help us understand how much new housing inventory and increased investment it will take to achieve a rapid and substantial reduction in unsheltered homelessness in the Bay Area region.** Several counties within the region have conducted similar local gap analyses though the methods, assumptions, and design of the models—to the extent they can be discerned from publicly available information—vary considerably. The findings of such local modeling efforts also quickly become out of date.

In designing the *Solutions Modeling*, All Home sought to develop an analytical tool that could be replicated across time and geography, producing comparable estimates for each of the nine Bay Area counties (and aggregated into regional sums) that could be updated on a regular basis. To accommodate this design goal, the modeling draws nearly entirely on publicly available data reported annually.<sup>1</sup>

The projections the model generates are associated with the implementation of a *particular homelessness reduction strategy*. Specifically, the analysis is guided by the Regional Action Plan's strategic framework, characterized by *concurrent investments* in three core solutions: homelessness prevention, permanent housing solutions, and interim housing. In system performance terms, the modeling is based on a strategy of reducing new incidences of homelessness while simultaneously expanding the available array of exits to permanent housing, and expanding interim housing inventory to facilitate exits to housing and mitigate the trauma of living unsheltered long-term. Strategy inherently informs modeling decisions and resulting estimates, and the strategic priority of concurrent scaling of all three program types informs ours.

The strategy of concurrent investments is important to call attention to because the estimated needs for new prevention, permanent housing, and interim housing depend on each other. These three program models are interdependent. It is common, for example, to hear public officials or the press ask, "How much more shelter do we need?" Answering this question is a deceptively complicated assignment since it depends on the answer to two additional questions: (1) What

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<sup>1</sup> In addition to publicly available sources described below, we also utilize the state's Homelessness Data Integration System (HDIS) data accessed through a public records request to the California Interagency Council on Homelessness (Cal ICH).

is your goal (i.e., the level by which you aim to reduce homelessness and on what timeline)? and (2) What else are you doing? Reducing the new incidence of homelessness through expanded prevention assistance reduces the new housing required to reach a designated goal. Similarly, creating more permanent housing solutions reduces the number of new interim housing required to reach unsheltered reduction goals, since people will be able to exit homelessness more rapidly (and thereby open up an existing unit of interim housing to accommodate others).

The Solutions Modeling tool was designed to draw attention to the interdependency of homelessness prevention, permanent housing solutions, and interim housing, and the unmet need for each program type. It makes this connection visible primarily by linking expectations for new homelessness to investments in expanded homelessness prevention assistance. This link in the analysis is perhaps the most important distinguishing design characteristic of the model. This step is nearly always left out of homelessness system modeling, in part because it is difficult to know for sure exactly what level of investment in prevention assistance will result in system-level reductions in new homelessness. Despite the formidable assumptions required, we think it is important to include this linkage in the modeling to demonstrate the potential impact of reducing new incidences of homelessness and to ensure that homelessness prevention programming does not go unaddressed in policy debates and budgetary considerations.

The model design also seeks to balance aspiration with pragmatism. A 75 percent reduction in unsheltered homelessness in five years represents an undeniably audacious goal. This is by design and reflects the Regional Action Plan's call to action to rally the investments required to address homelessness with a level of urgency that matches the severity of the humanitarian crisis. At the same time, we were determined to generate estimates for a strategy that could feasibly be implemented were substantial new resources put to the task. Achieving this balance required incorporating into the model the constraints faced in expanding and expediting the production of new affordable housing, even if and when sufficient resources are made available.

Finally, in developing and presenting Solutions Model estimates and reporting the methods below, we hope to provoke a productive conversation about the crucial role of systems planning and best practices for producing estimates to inform it. The design of the tool has already been informed and improved through All Home's technical assistance partnerships with cities and counties throughout the region. We look forward to continually engaging with partners and stakeholders to refine the model and generate findings that are most useful and actionable to them.

Ultimately, we hope the modeling estimates provide policymakers, administrators, and the public a high-level glimpse of the scale to which investment would need to grow to accommodate the current need for assistance and to reach homelessness reduction goals.

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## Calculating New Interventions and Units Required

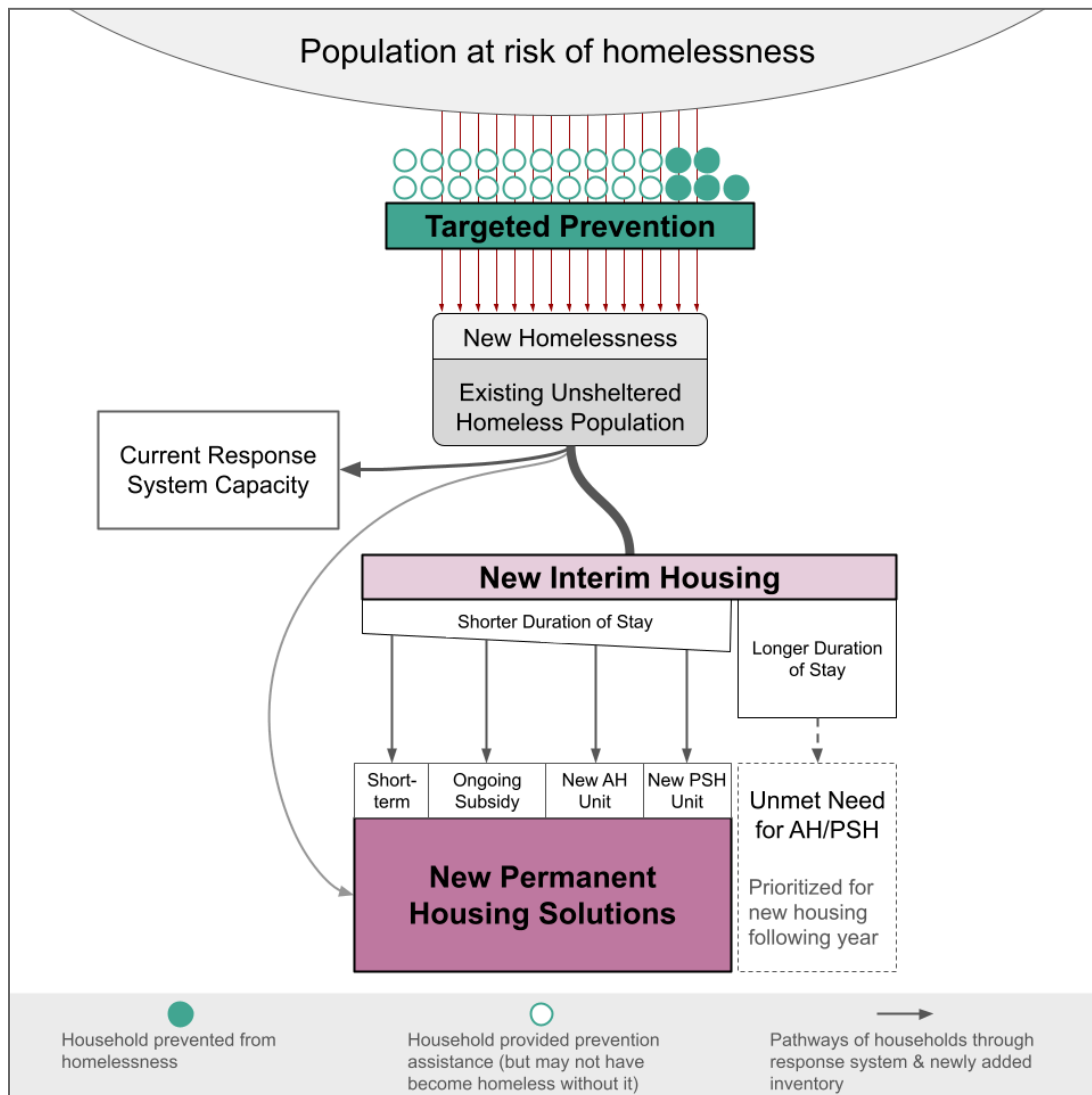
Solutions Modeling sets a goal of reducing unsheltered homelessness by 75 percent over five years. Estimates for the inventory needed to reach this goal are calculated through three broad steps which determine:

1. the total population needing housing assistance to reach the unsheltered reduction goal, including expectations for how many people will become homeless each year;
2. the number and types of new permanent housing solutions required to meet yearly goals; and,
3. the number of additional interim housing units required to facilitate exits to housing and accommodate unmet needs for new housing production.

This section describes how the modeling approaches each of these tasks, noting for each the key assumptions and data sources used. [Figure 1](#) visualizes these major components of the model and their relationship.

Note that the assumptions described below (and the strategic decisions they implicitly reflect) can be adjusted through technical assistance partnerships to incorporate local context and priorities in systems planning.

**Figure 1. Modeled solutions and system flow**



## Dynamic Population Projections and Prevention Impact

The population of people experiencing homelessness is dynamic. Thousands of people across the region resolved an episode of homelessness over the course of a year. Unfortunately, in recent years, thousands more people have become homeless either for the first time or returned to homelessness after resolving a previous experience. The Solutions Modeling analysis accounts for this dynamic nature of the homeless population by including both those currently homeless and those projected to become homeless in calculating the need for additional housing assistance.

The number of people currently experiencing homelessness is derived from the most recent Point-in-Time (PIT) count data available. Despite shortcomings resulting in what is widely acknowledged as an undercount,<sup>2</sup> PIT data serves as the most reliable, regularly reported proxy available for estimating the number of people currently living in unsheltered settings.

To project the number of people likely to become homeless in a given year, we draw on System Performance Measure (SPM) data reported annually to the U.S. Department of Housing and Urban Development (HUD). Specifically, we look to SPM 5 for “first-time homelessness.”<sup>3</sup> “First-time” is a somewhat misleading term, since in actuality it includes only people who enroll in a homelessness assistance program and who have no record of having enrolled in such a program in the previous two years. So, someone who stayed in a shelter three years earlier, for example, will be counted as homeless for the first time. It also counts as homeless for the first time anyone who experienced homelessness previously but did not engage the response system for some form of assistance.

The HUD SPM for first-time homelessness also only includes people enrolled in “residential” programs, including emergency shelters, transitional housing, rapid rehousing, and other permanent housing assistance. This means that this estimate does not include people experiencing homelessness but who engage with response systems only through street outreach, for example.<sup>4</sup>

We rely on this HUD measure to project new incidence of homelessness in part because—in lieu of reliable data on the proportion of people who “self-resolve” their episode of homelessness—it provides the best apparent proxy for the number of people requiring housing assistance to exit homelessness. Our baseline projections for new homelessness average this measure reported in the three most recent years (currently 2020-2022). To this number, we add the anticipated number of people *returning* to homelessness each year after a recent exit to housing, based also on SPM data.

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<sup>2</sup> Kim Hopper et al., “Estimating Numbers of Unsheltered Homeless People Through Plant-Capture and Postcount Survey Methods,” *American Journal of Public Health* 98, no. 8 (August 2008): 1438–42, <https://doi.org/10.2105/AJPH.2005.083600>; Monika Schneider, Daniel Brisson, and Donald Burnes, “Do We Really Know How Many Are Homeless?: An Analysis of the Point-In-Time Homelessness Count,” *Families in Society* 97, no. 4 (October 1, 2016): 321–29, <https://doi.org/10.1606/1044-3894.2016.97.39>.

<sup>3</sup> System Performance Measure data and reference material are available at <https://www.hudexchange.info/programs/coc/system-performance-measures/>

<sup>4</sup> Data from California’s Homelessness Data Integration System (HDIS) *does* include people enrolled in “non-residential” homelessness programs. For further information on how the HUD and HDIS measures align or diverge, see [https://www.bcsch.ca.gov/calich/documents/crosswalk\\_performance\\_measure.pdf](https://www.bcsch.ca.gov/calich/documents/crosswalk_performance_measure.pdf)

These baseline projections are then reduced by the designated “new homelessness reduction goal,” which we set at 15 percent. Reducing the new incidence of homelessness by this rate would require substantially scaling up targeted homelessness prevention assistance, a program that provides rapid, flexible financial assistance, housing stabilization services, and legal services when necessary to households most vulnerable to becoming homeless. The 15 percent reduction target—an undeniably aspirational goal—is in line with assumptions incorporated in system modeling conducted for the Los Angeles Homeless Services Authority, for example, which assumes expanded prevention assistance could reduce the need for interim housing by 20 percent.<sup>5</sup>

Determining how many distinct households need to be assisted by new homelessness prevention programming requires determining the *efficiency* with which services can be targeted. Even using research-informed strategies for targeting prevention assistance to households most vulnerable to experiencing homelessness, it is impossible to know with absolute certainty who would otherwise become homeless. The efficiency with which prevention services are targeted determines a ratio of the number of people who need to be assisted to the expected reduction in new homelessness. In the modeling, we peg prevention targeting efficiency at 15 percent, meaning between six and seven individuals will need to be served to reduce projected new homelessness by one. Achieving this aspirational level of efficiency will depend upon incorporating data-driven vulnerability criteria into targeting protocols.<sup>6</sup>

The current homeless population plus the number of individuals projected to become homeless each year (after the baseline is reduced to meet new homelessness reduction goals achieved through expanded prevention assistance) constitutes our estimate for the total population requiring housing assistance.<sup>7</sup> The five-year, 75 percent reduction target is broken into annual progress benchmarks, which determine the number of individuals provided housing assistance each year of the modeled strategy.

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<sup>5</sup> See *Homeless Services System Analysis: Envisioning an Optimal System in Los Angeles*, Los Angeles Homeless Services Authority, 2020. <https://www.lahsa.org/documents?id=4311-homeless-services-system-analysis-envisioning-an-optimal-system-in-los-angeles.pdf>.

<sup>6</sup> Work by the California Policy Lab compellingly demonstrates potential improvements in predictive power achievable through predictive modeling of data linking administrative records from multiple county departments. [https://www.capolicylab.org/wp-content/uploads/2019/12/Predicting\\_and\\_Preventing\\_Homelessness\\_in\\_Los\\_Angeles.pdf](https://www.capolicylab.org/wp-content/uploads/2019/12/Predicting_and_Preventing_Homelessness_in_Los_Angeles.pdf).

<sup>7</sup> The modeling uses PIT data to approximate the number of “single adult households” and “family households” requiring assistance to reach designated reduction goals, which informs both total interventions required and the per-unit program costs associated with each household type.



**Table 1a. Key Population and Prevention Assumptions**

Name	Description	RAP strategy
Unsheltered Homelessness Reduction Goal	Target for the percent by which unsheltered homelessness will be reduced by year five. (Maintained for years 6-10.)	75%
Inflow Reduction Goal	Target for the percent of projected new homelessness (both "1st-time and returns) prevented from becoming homeless	15%
Annual change in Inflow	Projected annual change in "1st-time" homelessness	0%
Prevention Targeting Efficiency	Percent of households receiving prevention assistance projected to have become homeless without the assistance. (Used to calculate the number of interventions required to reduce new homelessness by one.)	15%
Annual Benchmarks	Percent of the total Unsheltered Homelessness Reduction Goal achieved each year.	Year 1- 15% Year 2- 35% Year 3- 60% Year 4- 85% Year 5- 100%

**Table 1b. Key Population and Prevention Data Sources**

Measure	Description	Source
Baseline unsheltered homelessness	Total number of people currently experiencing unsheltered homelessness	Point-in-Time (PIT) Count data
Baseline new homelessness	Estimate for the number of people each year becoming homeless for the “first time,” as defined by HUD	HUD System Performance Measure 5.2.
Returns to homelessness	Estimate for the percent of people projected to return to homelessness within a year of exiting to permanent housing.	HUD System Performance Measure 2

## Permanent Housing Solutions

After determining the number of households requiring housing assistance to reach annual homelessness reduction benchmarks, we reduce this amount by what we term “current system capacity” which we define as the number of households for whom the current response system can reliably resolve homelessness with housing assistance in a given year. We draw on data from the state’s Homelessness Data Integration System (HDIS) reporting the number of individuals enrolled in assistance programs who exited to permanent housing destinations for a particular year. We add to this the number of individuals experiencing homelessness for the first time (as defined above) or returning to homelessness in a given year who were enrolled in either permanent supportive housing or other permanent housing programs.<sup>8</sup> Current system capacity is calculated for each jurisdiction by averaging these sums for the three years of most recently available data (2020-2022).<sup>9</sup>

After subtracting the current system capacity from the total housing assistance required for a given year, the model calculates the number and type of additional

<sup>8</sup> Some individuals connected with supportive housing are not officially counted as an “exit” since their housing is considered a part of the homelessness response system.

<sup>9</sup> Other homeless system modeling approaches often use HMIS data to establish “pathways” through response system programs that segments of the homeless population follow en route to housing (or a return to an unsheltered setting). These pathways are then extrapolated to calculate the additional inventory required to serve a large number of people. Because we rely on somewhat less granular, publicly available data, and given the rigidity of currently funded programs, we focus modeling on additive needs, rather than efficiencies possible within the current system.

interventions or units required to meet that year's needs. Four broad categories of permanent housing solutions are included in the model:

- **Short-term assistance** - a general category including one-time or time-limited financial or rental assistance and problem-solving support.
- **Ongoing Rental Subsidy** - comparable to housing choice vouchers, which provide subsidies to households renting housing on the private market.
- **New Affordable Housing Units** - newly developed, deeply affordable housing units with dedicated, ongoing funding for operations.
- **New Permanent Supportive Housing (PSH) Units** - newly developed, deeply affordable housing units requiring additional funding to provide ongoing mental health and other supportive services for residents requiring more support to maintain housing stability.

The added ongoing rental subsidies and new affordable units are serving essentially the same needs and purpose: expanding the amount of housing affordable to households with extremely-low-incomes. The model includes both categories to acknowledge that, while we won't need to build a new unit for all households served by these programs, we also can't achieve our goal solely by expanding rental subsidies. Expanding upon the existing stock of deeply affordable rental housing is required as well.

Our approach to determining how we distribute the total need for new housing support across these four categories strives to match approximate levels of need among the population with appropriate housing solutions while simultaneously acknowledging constraints in developing new units. Beginning with the *currently homeless* population, the number of new permanent supportive housing (PSH) units needed is estimated based on the proportion of people experiencing chronic homelessness (as determined by most recent PIT data).<sup>10</sup> Thus, rates of chronic homelessness are used as a proxy for the need for supportive housing.<sup>11</sup> After accounting for the number of new PSH units needed, the remaining permanent housing solutions required are distributed among the other three categories. For the *newly homeless* population, we generally assume a lower level of need for PSH, as the significant expansion of new housing resources should reduce the length of time most individuals experience homelessness.<sup>12</sup>

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<sup>10</sup> For their [California Homeless Housing Needs Assessment](#), the Corporation for Supportive Housing assumed that 90 percent of those experiencing chronic homelessness, and 10 percent of all other individuals experiencing homelessness, would be best served with permanent supportive housing.

<sup>11</sup> For HUD's official definition of chronic homelessness, see: <https://www.hudexchange.info/homelessness-assistance/coc-esg-virtual-binders/coc-esg-homeless-eligibility/definition-of-chronic-homelessness/>

<sup>12</sup> The proportions of households matched with these four, broad categories of housing support will not—and probably *should* not—match the interventions deemed

Assigning the approximate level of need for each of the four housing solutions is a distinct process from that of determining how many units can feasibly be produced in a given year. To determine this “baseline production limit,” we draw on data from the California Department of Housing and Community Development on the number of deeply affordable units completed in recent years. Each jurisdiction’s baseline production limit is calculated by averaging the number of new housing units affordable to households with very-low incomes (or VLI units) completed over the last five years.<sup>13</sup> This baseline determines the number of new units that can be completed in year one of the modeled strategy. We assume that—given the significant influx in new resources—production will increase incrementally, doubling by year five. Years six through ten maintain this heightened level of production.<sup>14</sup> Production limits are divided evenly between the new affordable housing and new PSH categories.

In many cases, the projected need for newly developed housing will surpass a given year’s production limit. This gap informs decisions about the number of new interim housing units required, as discussed below.

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most appropriate for households currently served by homelessness response systems. Given the current scarcity of resources to provide housing solutions, those who are currently prioritized to receive assistance represent the most vulnerable subset of the broader homeless population, and require a higher level of support (on average) than would be required by those served by an optimal, better balanced response system.

<sup>13</sup> While the bulk of the units required would qualify as units affordable to households with extremely-low incomes (or ELI units, dedicated to households earning below 30 percent area median income), data for this category of housing has been subsumed under the very-low income (VLI) category, representing housing affordable to households earning under 50 percent area median income.

<sup>14</sup> Beyond additional funding, expanding the annual production of deeply affordable housing to such a level will likely also require policy changes, particularly involving the process through which Low-Income Housing Tax Credits (LIHTC) are awarded. See, for example, [Lowering the 50% Test for 4% Tax- Exempt Bond Financed Properties](#).

**Table 2a. Permanent Housing Solutions Assumptions**

Name	Description	RAP strategy
New Unit Production Capacity Change	Number of new housing units (as a percentage of the baseline production limit) that can be produced in a given year. Used to inform incremental increases in production capacity.	200% by year 5.
Percent assigned PSH	Percent of population matched with PSH as their permanent housing solution (for both currently homeless population and those projected to become homeless in future years.)	Current: 24-67% <sup>15</sup> New: 20%
Percent assigned newly constructed affordable units	Percent of population matched with newly constructed affordable units as their permanent housing solution.	Current: 10-23% New: 24%
Percent assigned ongoing rental subsidy	Percent of population matched with full rental subsidy as their permanent housing solution.	Current: 13-30% New: 32%
Percent assigned short-term assistance	Percent of population matched with short-term assistance as their permanent housing solution.	Current: 10-23% New: 24%

<sup>15</sup> Solano County is somewhat of an outlier based on its current rate of chronic homelessness (17%), and is not included in this range..

**Table 2b. Permanent Housing Solutions Data sources**

Measure	Description	Source
Current System Capacity	Projected number of people to be housed via current system (i.e., not requiring additional investment). Sums all exits to permanent housing plus "first-time" homeless and returns enrolled in PSH or other permanent housing. 3-year average (2020-2022).	Homeless Data Integration System
Chronic homelessness rate	Percent of the currently homeless population experiencing chronic homelessness, as defined by HUD. Used to determine PSH needs.	PIT count data.
New Production Baseline limit	Average number of VLI units completed over the last five years. Used to establish annual production thresholds for new units produced in year one.	HCD Housing Element Implementation and APR Data Dashboard

## Interim Housing

Calculating the number of new interim housing units needed is an undeniably contentious and deceptively complicated task.<sup>16</sup> In response, we have developed a relatively conservative yet grounded approach to the challenge. Our estimates for interim housing are based on the program serving two strategic purposes:

- Short stays for stabilizing and facilitating exits to housing** - We assume that a majority of households exiting into permanent housing in a given year will stay in interim housing for a matter of several months. These short stays create opportunities for connecting to supportive services, facilitate the process of collecting documentation required to access most subsidized housing options, and reduce the added traumas and adverse health impacts associated with living in unsheltered settings.

<sup>16</sup> Recent efforts to estimate regional or statewide need for added interim housing are often static and do not incorporate dynamic variables that demonstrate the interconnection between prevention, interim housing, and permanent housing. Other approaches underestimate the true need for interim housing by basing estimates on survey data indicating low portions of people experiencing homelessness expressing interest in available shelter options. When the interim housing aligns with All Home's [Interim Housing Principles](#), we believe a larger share of individuals are likely to embrace the opportunity for dignified, supported interim options, a perspective supported by [recent research](#) comparing interim housing models in Portland.

- **Longer stays when the need for new housing exceeds production limits**
  - Especially in the early years of implementing the strategy, we assume there will be a gap between the permanent housing needed and what can be completed and made available. In such cases, we add additional interim units equivalent to this gap. This decision follows a philosophical view that the street should not serve as the waiting room for the housing we cannot yet build fast enough.

The total new interim housing units added for a given year adds the number of units required to accommodate the short stays (in which each unit will accommodate multiple households over a year) and longer stays (in which each unit is dedicated to one household to be prioritized for new housing the following year). Given the speed with which many modular or acquisition and rehab projects have come online, we do not include production limits for interim housing in the model.

In some cases, we allow a portion of a system's current emergency shelter and interim housing stock to be made available for implementation of the RAP, thereby reducing the overall need for new interim housing. This determination is made by comparing the current number of shelter beds and interim units to the current system capacity (i.e., the anticipated number of exits to housing in a given year from the current response system). For systems with higher ratios of current stock to expected exits, we assume that—given the significant influx of new permanent housing solutions coming online and the likely reduction in the average duration of homelessness—current interim stock can likely accommodate a portion of the newly assisted population.

After the first five years of the strategy (by which point the reduction target will have been met), no additional interim housing stock is required to be added. In many cases, the need for new interim housing declines after this point since the number of exits to housing will have stabilized and the new production limits will have increased. The model decommissions new interim housing in increments of ten units while maintaining a modest buffer between units needed and units maintained in operation.

**Table 3a. Interim Housing Assumptions**

Name	Description	RAP strategy
Percent w/ short stay in Interim Housing	Percent of households staying in new interim housing units prior to exiting to permanent housing (by permanent housing assigned).	-50% (short-term assistance) -70% (ongoing subsidy) -70% (new affordable unit) -80% (new PSH unit)
Average short stay duration in new interim housing	Anticipated average duration of stay in interim housing for households exiting to housing in a given year (by permanent housing assigned).	-2 months (short-term assistance & ongoing subsidy) -3 months (new affordable & PSH units)
Exit to Housing Rate	Projected percentage of households with longer stay in interim housing projected to exit to permanent housing. (Remaining percent included in next year's projections for returns to homelessness.)	75%

**Table 3b. Interim Housing Data Sources**

Measure	Description	Source
Existing shelter beds and Interim Housing Units	Total number of shelter beds, transitional housing, and interim housing currently in operation. Informs determination for the number of additional interim housing units required.	HUD Housing Inventory Count (HIC)



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## Calculating Required Funding

Per-unit cost ranges for each of the inventories added in the modeling are included in [Table 4a](#).

All capital costs (associated with the development of new affordable and supportive housing units and new interim housing) are one-time costs and included in the costs for the year in which the new units come online. For new affordable and PSH units, we first calculate estimates for total, per-unit costs for each county based on tax credits awarded by the California Tax Credit Allocation Committee for 2020-2023.<sup>17</sup> However, only a portion of this total per-unit cost—about 40 percent—is included in the estimates of funding required. This portion of the total cost approximates the gap in financing left after accounting for affordable housing tax credits and hard debt. For interim housing, the full per-unit costs are included in the modeling.

The operations and services cost category includes all required expenditures for prevention programming, short-term assistance, and full subsidy permanent housing solutions, as well as the ongoing operations and services costs associated with each newly constructed affordable, PSH, and interim unit. The costs for prevention and short-term assistance are one-time costs for providing assistance to distinct households. Costs for full rental subsidies along with the operations and services costs for new affordable and PSH units are ongoing and persist over time. For these programs, yearly costs include all new interventions or units added that year plus all those added in previous years. For newly added interim housing units, operations and services costs are only calculated for units remaining in operation, excluding new units created but decommissioned in later years.

All baseline per-unit costs increase in the modeling by annual inflation of 3 percent.

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<sup>17</sup> Per-unit costs used are based only for awarded projects with units serving households earning under 30% area median income, with averages weighting more heavily projects serving formerly homeless households.

**Table 4a. Per-unit Cost Ranges**

<b>Solution</b>	<b>Program/Cost Type</b>	<b>Cost Range</b>
Targeted Prevention	Financial assistance (services/ops)	\$5,000-\$12,000/household
Permanent Housing	Short-term assistance (services/ops)	\$8,000-\$12,000/household
	Ongoing Subsidy (services/ops)	\$15,000-\$27,000/household
	New Affordable/PSH Units (capital)	\$500,000-\$850,000/unit
	New Affordable Housing Units (services/ops)	\$25,000-\$40,000/unit
	New PSH Units (services/ops)	\$40,000-\$50,000/unit
Interim Housing	New Interim Units (capital)	\$100,000-\$200,000/unit
	New Interim Units (services/ops)	\$30,000-\$60,000/unit

**Table 4b. Per-unit Cost Data Sources and Informative References**

Solution	Program/Cost Type	Source/Reference Material
Targeted Prevention	Financial assistance	Based on multiple programs administered in partnership with All Home
Permanent Housing	Short-term assistance (services/ops)	Review of public documents and informed by UCSF's <a href="#">California Statewide Study of People Experiencing Homelessness</a> survey findings.
	Ongoing Subsidy (services/ops)	Average Housing Choice Voucher amount from representative Housing Authority in each county. Source: <a href="#">HUD HCV Data Dashboard</a>
	New Affordable/PSH Units (capital)	County averages based on 4% and 9% Tax Credits awarded by <a href="#">California Tax Credit Allocation Committee</a> , for units serving <30% AMI.
	New Affordable/PSH Units (services/ops)	Informed by <a href="#">The California Homeless Housing Needs Assessment</a> and review of public documents.
Interim Housing	New Interim Units (capital)	Review of public documents.
	New Interim Units (services/ops)	Review of public documents.

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## Interactive Dashboard

The [Regional Action Plan Solutions Dashboard](#) presents modeling estimates for all nine Bay Area counties and the region as a whole in an interactive format. It allows users to modify key strategic decisions that impact the resulting estimates:

1. The target percentage by which unsheltered homelessness will be reduced by year five.
2. The target percentage by which yearly new homelessness will be reduced through expanded prevention assistance.

To allow for this interactivity, estimates were modeled for each combination of the choices available for the “Reduce Unsheltered Homelessness by...” goal (25%, 50%, 75%) and the “Prevent New Homelessness by...” goal (0%, 5%, 15%, 25%), while holding all other variables constant. This effectively resulted in estimates for twelve distinct scenarios for each county and the region as a whole.

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## Limitations

Like any attempt to model complex human systems, the Solutions Modeling tool is not a perfect representation of reality. Many broad social forces—fluctuations in the economy or policy decisions made at the state or federal level—cannot be accounted for even though their impact on homelessness and response systems is undeniable. The high-level estimates it produces cannot address all the nuanced details required in the process of implementing such a strategy. So, readers are encouraged to view the estimates as “ballpark” figures, and collectively as a blueprint for how to build a solution to homelessness. This blueprint provides a picture of what we will need to build, but an extraordinary amount of decisions, collaboration, and problem-solving will be needed to make it a reality.

There are several more specific limitations of the tool and estimates worth acknowledging, several with important implications for implementation. First, while we believe that we are drawing on the best available data to serve the purposes of the Solution Modeling tool, data sources on homelessness are notoriously imprecise. Available data for the number of households both experiencing and resolving episodes of homelessness in a given year are indicative, but likely both undercounts. Additionally, even the most recent year’s data on new entries into homelessness is not easily comparable to data from previous years, since a growing number of programs are now required to report

to local homeless management information systems (HMIS).<sup>18</sup> As a result, the entries-to-exits ratio and the resulting change in unsheltered homelessness cannot be established with a high level of precision, especially since we are forced to blend observational data (from the PIT count) with program enrollment data (from SPMs and HMIS sources).

Because we currently lack a systematic way of calculating *current* spending on homelessness programs, it is difficult to contextualize the estimates for *additional funding* produced by the model. Currently, the only standardized source for estimating local spending on homelessness is found within applications for the state's Homelessness Housing, Assistance, and Prevention (HHAP) grant program.<sup>19</sup> However, it was not until round three in 2021 that applicants were required to identify funding available by year. Individual program data is also impossible to track as programs are often commingled based on the funding source, and these estimates often involve guesswork and approximation by applicants.

Further, given the significant fluctuation of one-time funds made available for addressing homelessness since 2020, we cannot assume that the levels of funding available in recent years reflect the funding available moving forward. As we continue improving and revising estimates of what we will need to reach strategic goals, we hope to identify new methods for establishing baselines for funding and expenditures by program type.

Our high-level modeling estimates—which lump solutions into broad categories—are not intended to imply that the needs of people experiencing homelessness are homogenous. The programs and practices required to best assist those vulnerable to or currently experiencing homelessness are more nuanced and detailed than our estimates can convey.

A final limitation to note involves implementation considerations related to the model's estimates for newly developed housing stock. While the modeled estimates focus solely on the number of new affordable and supportive units needed for formerly homeless households, units serving this population are nearly always a minority of the total units in a new development. Implementing the strategy, then, would likely require developing additional units dedicated to a larger spectrum of low-income households, housing for which there is an urgent need.

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<sup>18</sup> Legislation passed in 2021 (AB 977) expanded the list of state-funded programs required to report into HMIS beginning in 2023.  
[https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=202120220AB977](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220AB977)

<sup>19</sup> Details and application materials for all HHAP funding rounds can be accessed at [https://bcsh.ca.gov/calich/hhap\\_program.html](https://bcsh.ca.gov/calich/hhap_program.html).

With these limitations in mind, Solutions Modeling estimates are most useful and informative when considered alongside supplemental information and complementary analysis. We highlight these limitations to foster productive conversation on how to best refine the model and the estimates it produces.

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## Looking Ahead

The design decisions and estimates described above represent those associated with the inaugural version of the Solutions Modeling tool. Moving forward, we anticipate updating the modeling regularly to incorporate updated data and to refine the model design based both on feedback and from our experience working with local jurisdictions to incorporate estimates into strategic planning and policy decisions. We welcome questions, feedback, and requests for more in-depth engagement with local jurisdictions and other stakeholders interested in supporting a common goal of rapidly, substantially, and effectively reducing homelessness across the Bay Area region.